ATTENTION SENSATION PERCEPTION

It refers to focusing and processing information from our surroundings. While it involves our tending to facets of our environment, the nature of our attention can vary from event to event. There are four main types of attention that we use in our daily lives: selective attention, divided attention, sustained attention, and executive attention.

Types of attention

1. Selective attention takes place when we block out certain features of our environment and focus on one particular feature, like the conversation you are having with your friend.
2. When we are paying attention to two things at once, we are using divided attention.
3. Sustained attention takes place when we can continually focus on one thing happening, rather than losing focus and having to keep bringing it back. People can get better at sustained attention as they practice it.
4. Executive attention is particularly good at blocking out unimportant features of the environment and attending to what really matters. It is the attention we use when we are making steps toward a particular end.

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Models of attention

Early selection theories

- Broadbent's model of selective attention or Filter theory

The theories described here belong to the group of filter and bottleneck theories. A filter blocks some of the information going through and thereby selects only a part of the total of information to pass through to the next stage. A bottleneck slows down information passing through. The models differ in two ways. First, do they have a distinct "filter" for incoming

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information? Second, if they do, where in the processing of information does the filter occur (early or late)?

- Broadbent's Model

According to one of the earliest theories of attention, we filter information right after we notice it at the sensory level. Multiple channels of sensory input reach an attentional filter. Those channels can be distinguished by their characteristics like loudness, pitch, or accent.

The filter permits only one channel of sensory information to proceed and reach the processes of perception. We thereby assign meaning to our sensations. Other stimuli will be filtered out at the sensory level and may never reach the level of perception.

Broadbent's theory was supported by Colin Cherry's findings that sensory information sometimes may be noticed by an unattended ear if it does not have to be processed elaborately (e.g., you may notice that the voice in your unattended ear switches to a tone). But information requiring higher perceptual processes is not noticed if not attended to (e.g., you would likely not notice that the language in your unattended ear switches from English to German).

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- Selective Filter Model

The evidence began to suggest that Broadbent's model must be wrong. Moray found that even when participants ignore most other high-level (e.g., semantic) aspects of an unattended message, they frequently still recognize their names in an unattended ear. He suggested that the reason for this effect is that messages that are of high importance to a person may break through the filter of selective attention. But other messages may not. To modify Broadbent's metaphor, according to Moray, the selective filter blocks out most information at the sensory level. But some personally important messages are so powerful that they burst through the filtering mechanism.

- Attenuation Model

To explore why some unattended messages pass through the filter, Anne Treisman conducted some experiments. She had participants shadowing coherent messages, so they must have been somehow processing the content of the unattended message.

Moray's modification of Broadbent's filtering mechanism was clearly not sufficient to explain Treisman's findings. Her findings suggested that at least some information about unattended signals is being analyzed. Treisman proposed a theory of selective attention that involves a later filtering mechanism (Figure 4.9). Instead of blocking stimuli out, the filter merely weakens (attenuates) the strength of stimuli other than the target stimulus. So when the stimuli reach us, we analyze them at a low level for target properties, we pass the signal on to the next stage; if they do not possess those target properties, we pass on a weakened version of the stimulus. In a next step, we perceptually analyze the meaning of the stimuli and their relevance to us, so that even a message from the unattended ear that is supposedly irrelevant can come into consciousness and influence our subsequent actions if it has some meaning for us.

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